

REMARKS

Applicant has reviewed and considered the Notice of Non-Responsive Amendment mailed July 13, 2004 and the Office Action mailed on September 25, 2003.

Claims 19, 20, 53, 79, 82, 85, 108, 110, 111, and 112 are amended and claim 125 is added. Claims 19, 20, 53, 79-87, 98-102, and 104-125 are now pending in this application.

The claim set included herewith now includes the Amendments made to the claims in the Amendment and Response dated December 23, 2003 and to the claims in the Amendment and Response dated in April 29, 2004.

Election

The Office Action mailed July 13, 2004 indicates that 19, 20, 53, 79, 81, 82, 84, 85, 87, and 107-112 are drawn to a nonelected Embodiment 3. Applicant respectfully disagrees.

Applicant notes that, in the Office Action dated January 2, 2002, Embodiment 1 and Embodiments 3 were characterized as follows:

Embodiment 1, drawn to a capacitor structure comprising a first conductive capacitor plate, a dielectric comprising a metal oxide such as titanium dioxide, and a second conductive capacitor plate.

Embodiment 1, drawn to a capacitor structure comprising a first conductive capacitor plate comprising a polysilicon layer and a metal layer, a dielectric comprising a metal oxide such as titanium dioxide, and a second conductive capacitor plate.

Applicant respectfully asserts that Embodiment 1 is generic to Embodiment 3 because Embodiment 3 includes all of the identified elements of Embodiment 1. Additional elements in Embodiment 3 do not prevent Embodiment 3 from reading on Embodiment 1. The only difference between Embodiment 3 and Embodiment 1 is reflected in the underlined portion, which indicates that the first conductive capacitor plate comprises a polysilicon layer and a metal layer. Thus, Applicant asserts that claims that read on Embodiment 3 also read on Embodiment 1.

Applicant respectfully requests reconsideration of the claims.

However, to expedite prosecution, Applicant amends the claims for clarity so that claims 19, 20, 53, 79, 81, 82, 84, 85, 87, and 107-112 still read on the elected species of Embodiment 1.

Generic and linking claims

Applicant submits that new claim 125 is a generic claim of all species corresponding to Embodiment 1 through Embodiment 4. Moreover, it is believed that at least one of the claims 19, 20, and 53 a generic/linking claim between the elected Embodiment I and other species corresponding to Embodiment II and Embodiment III. Accordingly, allowance of any one of the claims 19, 20, and 53 should result in allowance of the claims of the other species.

§102 Rejection of the Claims

Claims 19, 53, 79, 81, 85, 87, 108, and 112 were rejected under 35 USC § 102(b) as being anticipated by Suguro et al. (U.S. Patent No. 5,189,503).

Claim 19 is amended. As amended claim 19 recites, among other things, a first conductive capacitor plate of “a first material”, a second conductive capacitor plate, and a dielectric interposed between the first and second conductive capacitor plate. Claim 19 also recites that the dielectric includes “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”.

Applicant cannot find in Suguro et al. a first conductive capacitor plate of “a first material” and a dielectric including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”. Suguro et al. discloses in FIG. 7d a first conductive capacitor plate (45) of W and a dielectric (47) of WO₂. Since first conductive capacitor plate (45) and dielectric (47) of Suguro et al. are formed from W (first material), first conductive capacitor plate (45) and dielectric (47) of Suguro et al. are not formed from “a first material” and a “second material”. In contrast, in claim 19 of the present invention, the first conductive capacitor plate is formed from “a first material” and the dielectric includes an oxidized portion wherein “the oxidized portion includes a second material”.

Accordingly, Applicant requests that the rejection of claim 19 be reconsidered and withdrawn and that claim 19 and its dependent claims 79, 81, and 108 be allowed.

Claim 53 recites, among other things, a first capacitor electrode of “a first metal material” and a dielectric layer including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second metal material”. Claim 53 further clarifies that the second metal material is “different” from the first metal material. Applicant cannot find in Suguro et al.

a first capacitor electrode of “a first metal material” and a dielectric layer including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second metal material different from the first metal material”.

Accordingly, Applicant requests that the rejection of claim 53 be reconsidered and withdrawn and that claim 53 and its dependent claims 85, 87, and 112 be allowed.

Claims 19, 53, 79, 81, 85, 87, 107, 108, 111, and 112 were rejected under 35 USC § 102(b) as being anticipated by Hirose (JP 7-226485).

Claim 53 is amended. As amended, claim 53 recites, among other things, a first capacitor electrode of “a first metal material” and a dielectric layer including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second metal material”. Claim 53 further clarifies that the second metal material is “different” from the first metal material.

Applicant cannot find in Hirose a first capacitor electrode of “a first metal material” and a dielectric layer including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second metal material different from the first metal material”. Hirose discloses in FIG. 13 a first capacitor electrode (13) of Ti and a dielectric (14) of TiO₂. The surface of dielectric 14 is heated to form a high resistance film (14A). Thus, high resistance film (14A) is also TiO₂. Since first capacitor electrode (13) and dielectric (14) or (14A) of Hirose are formed from the same material (Ti), first capacitor electrode (13) and dielectric (14) or (14A) of Hirose are not formed from “different” materials. In contrast, in claim 53 of the present invention, the first capacitor electrode is formed from “a first metal material” and a dielectric layer formed from “a second metal material” which is “different” from the first metal material.

Accordingly, Applicant requests that the rejection of claim 53 be reconsidered and withdrawn and that claim 53 and its dependent claims 85, 87, 111, and 112 be allowed.

Claim 19 recites, among other things, a first conductive capacitor plate of “a first material”, a second conductive capacitor plate, and a dielectric interposed between the first and second conductive capacitor plate. Claim 19 also recites that the dielectric includes “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”. Applicant cannot find in Hirose a first conductive capacitor of “a first material” and a dielectric layer including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”.

Accordingly, Applicant requests that the rejection of claim 19 be reconsidered and withdrawn and that claim 19 and its dependent claims 79, 81, and 108 be allowed.

§103 Rejection of the Claims

Claims 20, 82, 84, and 110 were rejected under 35 USC § 103(a) as being unpatentable over Boldgett et al. (U.S. Patent No. 5,811,990) in view of Suguro et al.

Claim 20 is amended. As amended, claim 20 recites, among other things, a first conductive capacitor plate of “a first material”, a second conductive capacitor plate, and a dielectric interposed between the first and second conductive capacitor plate. Claim 20 also recites that the dielectric includes “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”.

Applicant cannot find in Boldgett et al. a first conductive capacitor plate of “a first material” and a dielectric including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”. As presented above in the *§102 Rejection of the Claims*, Applicant also cannot find Suguro et al. a first conductive capacitor plate of “a first material” and a dielectric including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”. Thus, neither Boldgett et al. nor Suguro et al. discloses a first conductive capacitor plate of “a first material” and a dielectric including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”. Therefore, claim 20 is patentable over Boldgett et al. and Suguro et al. Accordingly, Applicant requests that the rejection of claim 20 be reconsidered and withdrawn and that claim 20 and its dependent claims 82, 84, and 110 be allowed.

Claims 20, 82, 84, 109, and 110 were rejected under 35 USC § 103(a) as being unpatentable over Boldgett et al. in view of Hirose.

Claim 20 recites, among other things, a first conductive capacitor plate of “a first material”, a second conductive capacitor plate, and a dielectric interposed between the first and second conductive capacitor plate. Claim 20 also recites that the dielectric includes “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”.

Applicant cannot find in Boldgett et al. a first conductive capacitor plate of “a first material” and a dielectric including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”. As presented above in the §102 *Rejection of the Claims*, Applicant also cannot find in Hirose a first conductive capacitor plate of “a first material” and a dielectric including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”. Thus, neither Boldgett et al. nor Hirose discloses a first conductive capacitor plate of “a first material” and a dielectric including “a non-oxidized portion” and “an oxidized portion” wherein “the oxidized portion includes a second material”. Therefore, claim 20 is patentable over Boldgett et al. and Hirose. Accordingly, Applicant requests that the rejection of claim 20 be reconsidered and withdrawn and that claim 20 and its dependent claims 82, 84, 109, and 110 be allowed.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's representative at (612) 373-6969 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743

Respectfully submitted,

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Date August 13, 2004

By 

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 13 day of August, 2004.

Tina Kohut

Name



Signature